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Definition for “Limitation” in the Context of
Prosecution History Estoppel and the All Elements
Rule: A Proposed Solution to the Troubling Dictum
in *Kustom Signals v. Applied Concepts*

I. INTRODUCTION

United States Patent Law is one of the most rapidly evolving areas of law,¹ and the past few years have been particularly eventful. One of the focuses of recent debate has been the doctrine of equivalents, a long-standing legal doctrine designed to protect patent holders from fraud.² The Court of Appeals for the Federal Circuit (CAFC)—a court created two decades ago for the purpose of harmonizing and clarifying patent law³—has been heavily involved in this debate, along with the United States Supreme Court. In the wake of two monumental cases decided by these two courts,⁴ the CAFC recently decided the case of *Kustom Signals v. Applied Concepts*.⁵ In a troubling dictum, the *Kustom Signals* court announced that “[t]he word ‘or’ is not itself an ‘element’ of an apparatus or a step of a method, and its presence to signify alternative elements does not convert ‘or’ into an element.”⁶ This

1. This is true because of the changes always occurring in science and technology, the relatively narrow focus of the United States Court of Appeals for the Federal Circuit, and that court’s ability to take many patent cases every year. See *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 390 (1996).

2. See *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17 (1997); *Graver Tank & Mfg. Co. v. Linde Air Prods. Co.*, 339 U.S. 605, 609 (1950).

3. *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 234 F.3d 558, 571 (Fed. Cir. 2000), *vacated by* 122 S. Ct. 1831 (2002); see also *Markman*, 517 U.S. at 390 (citing H.R. REP. NO. 97-312, at 20–23 (1981)).

4. The two notable cases are *Warner-Jenkinson*, 520 U.S. 17, and *Festo*, 234 F.3d 558. Each of the cases came through the CAFC and was later appealed to the Supreme Court. The Supreme Court vacated the CAFC’s *Festo* opinion, but not in a way that resolves the questions raised by this Note about the definition of “element.” See *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 122 S. Ct. 1831 (2002).

5. *Kustom Signals, Inc. v. Applied Concepts, Inc.*, 264 F.3d 1326 (Fed. Cir. 2001), *cert. denied*, 122 S. Ct. 1537 (2002).

6. *Id.* at 1333.

statement reveals inconsistency and definitional problems in the law. This Note will discuss those problems and propose a solution.

The underlying problem revealed by this dictum is that “element” has not been satisfactorily defined by the courts. The fundamental policies of patent law require that such central terms be defined.⁷ Patentees must have notice of what their patent is worth.⁸ The public must know where the patentee’s rights end.⁹ A stable economy requires law that is predictable and clear, and this is especially important in patent law. The first part of the solution is to eliminate the use of the word “element” and to instead use the word “limitation.” Second, “limitation” must be defined functionally, so that the practical effect of even a single word can be recognized by the law. Part II will present the legal background and cases that frame the debate. Part III will provide details of the *Kustom Signals* case itself, and Part IV will propose and analyze a two-step solution to the current confusion in this area of law: (1) replacement of the word “element” with the word “limitation” in prosecution history estoppel and the All Elements Rule, and (2) clear definition of the word “limitation” tailored to bring consistency and accomplish the policies underlying these legal doctrines.

II. BACKGROUND

Article I, section eight of the U.S. Constitution gives Congress the power to “promote the Progress of Science . . . by securing for limited Times to . . . Inventors the exclusive Right to their . . . Discoveries.”¹⁰ Congress has used this power to establish various patent statutes,¹¹ and the modern components of patent law have roots in patent statutes and cases more than a century old.¹² The current patent statute requires that all new patents issued by the

7. Brief for Amicus Curiae in Support of Neither Party on Behalf of The Patent, Trademark, & Copyright Section of the Bar Association of the District of Columbia, *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 2001 WL 1025555, at *6–*9 (S. Ct. Aug. 31, 2001) No. 00-1543 [hereinafter *Brief for Amicus Curiae*].

8. See *Festo*, 234 F.3d at 574–75.

9. *Id.*

10. U.S. CONST. art. I, § 8, cl. 8.

11. See, e.g., Pub. L. No. 89-83, 79 Stat. 259 (1965); Patent Act, ch. 230, § 26, 16 Stat. 198, 201 (1870); Patent Act, ch. 357, § 6, 5 Stat. 117, 119 (1836); Patent Act, ch. 7, § 2, 1 Stat. 109, 110–11 (1790).

12. See *Brief for Amicus Curiae*, *supra* note 7, at *6 n.9; *Evans v. Eaton*, 16 U.S. (1 Wheat.) 454 (1818).

Patent and Trademark Office (PTO) be useful,¹³ novel,¹⁴ and not obvious.¹⁵ These basic requirements can be stated simply, but federal courts have long been elaborating and interpreting what these three requirements actually mean—attempting to find specific meaning in these general terms.

Patents give limited legal monopoly rights to inventors or their assigns, but the scope of those rights depends on the quality and wording of the patent itself. There are two critical times for determining whether a patent passes muster under the statutory standard: when the application is submitted to the scrutiny of an examiner at the PTO to determine whether it should issue as a patent and when litigation arises concerning the already-issued patent. Despite the fact that an issued patent enjoys a presumption of validity,¹⁶ litigation often presents the more rigorous test for a patent because an accused infringer will often, as a defense to infringement, attack the validity of the patent being asserted. Litigation also differs from examination in that the patent claims are compared, not only to the *prior art*,¹⁷ but also to the *accused* device or process.¹⁸

A. Claims

United States patent statutes have always required that a patent contain a “written description” of the thing to be patented.¹⁹ In 1836 the law was amended to require that the description contain “claims,”²⁰ and it was amended again in 1870 to require the patent applicant to “claim the part, improvement, or combination” that

13. 35 U.S.C. § 101 (2000).

14. *Id.* at § 102.

15. *Id.* at § 103.

16. *Id.* § 282.

17. Prior art is any information that is already available to the public that could potentially disqualify the invention from patent protection. It is the information that could show that the invention is not so new after all. Prior art can include scientific articles, advertising material, public statements made by the inventor, published specifications, and so forth. The definition of prior art is very broad because of the statutory language of 35 U.S.C. §§ 102–03. Any thing “in use” or “described in a printed publication” is possible prior art. §§ 102–03.

18. A device that allegedly infringes is an *accused device*, and the claims of the patent it allegedly infringes must describe that device in order for infringement to be found. *See Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 38–39 (1997).

19. Patent Act, ch. 7, § 2, 1 Stat. 109, 109–12 (1790).

20. Patent Act, ch. 357, § 6, 5 Stat. 117 (1836).

constitutes the invention.²¹ Today, patents must contain claims, and the claim language has become the central focus of both patent drafting and patent litigation. The claims are made up of formal—sometimes technical—language, carefully chosen to set forth the legal parameters of the invention. The claim language is scrutinized and compared to other inventions, publications, and other kinds of prior art to see if the invention is truly novel and not obvious. The claims are also scrutinized to determine infringement—to determine whether or not the subject matter of the accused device falls within the scope of the claims.²² Because claims have such a formal legal effect, the organization of words within the claims is very important, and courts disagree about how best to parse claim language. Courts have used the terms “elements” and “limitations” to refer to the words, phrases, and sentences that make up the claims. Still, a fierce debate centers on exactly what those terms mean.²³ In *Kustom Signals*,²⁴ this issue is raised in dicta, but it demonstrates forcefully how much depends on the definitions of these terms.

Claims generally consist of three parts: a preamble; a transition phrase such as “comprising”; and a list of components, steps, and relationships that the applicant deems essential to defining the invention. Each claim is written in the form of a sentence, beginning with a capital letter and ending with a period. A simple claim could read something like this:

An apparatus for keeping a human head dry during a shower comprising:

- (a) a waterproof material larger than the head,
- (b) connected to an elastic material at the edge of said waterproof material,
- (c) said elastic material allowing for insertion of the head,
- (d) said elastic material keeping said waterproof material snugly fitted to, and enclosing the head.

In this example, the preamble is “An apparatus for keeping a human head dry during a shower”; the transitional word is

21. Patent Act, ch. 230, § 26, 16 Stat. 198, 198–217 (1870).

22. See *Warner-Jenkinson*, 520 U.S. at 38–39.

23. The history of these terms is set forth in *Brief for Amicus Curiae*, *supra* note 7, at *6–*8.

24. *Kustom Signals, Inc. v. Applied Concepts, Inc.*, 264 F.3d 1326, 1333 (Fed. Cir. 2001).

“comprising”; and the list of components, steps, and relationships is the rest of the words in the claim. By virtue of authorship, the drafter of a claim has full discretion in organizing a claim into subparts, and the author also has the option of numbering the subparts, of spacing them, or of distinguishing them in some other way.²⁵ Although a group of words in a claim can be referred to as an element of the claim, the term “element” has other uses in patent law. These multiple and confusing definitions make “element” a problematic word for reasons to be discussed below.²⁶

B. Infringement

Patent litigation arises when a patent holder, or patentee, elects to assert her patent rights against someone else that she believes is producing or selling a device that is identical to, or resembles very closely, her patented device. The patent provides notice to the public of the rights of the patentee,²⁷ but once the PTO has issued a patent, it is up to the patentee to enforce that patent through civil actions against infringers. The patentee has incentive to sue infringers because if she does not, they may erode her rightful, limited monopoly and destroy the economic value of her patent.

Infringement can be relatively easy to detect and defeat when the accused product is identical to the patented product. However, two products are never placed side by side to determine infringement. Rather, the accused product is compared to the claims of the patent.²⁸ Because language is inherently imprecise, this comparison of device to language is a great source of uncertainty in the law.

Although patent claims were described above as providing a formal description of the invention, a claim can also be seen as a list of requirements. Any device that fits the description, or meets these

25. The *Code of Federal Regulations* gives some guidance to patent drafters in this regard: “[A] claim sets forth a series of elements, each element or step of the claim should be separated by a line indentation.” 37 C.F.R. § 1.75(i) (2002); see also *Brief for Amicus Curiae*, *supra* note 7, at *13.

26. Aside from the meaning presented here (a group of words in a claim, or series of claim limitations), *ACLARA Biosciences, Inc. v. Caliper Techs. Corp.*, 125 F. Supp. 2d 391 (N.D. Cal. 2000), a second definition of “element” is a portion of an accused device, as explained in *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 234 F.3d 558, 563 n.1 (Fed. Cir. 2000), *vacated by* 122 S. Ct. 1831 (2002). See also *Brief for Amicus Curiae*, *supra* note 7, at *10–*13.

27. See *Festo*, 234 F.3d at 574–75.

28. *Beckson Marine, Inc. v. NFM, Inc.*, 292 F.3d 718, 724 (Fed. Cir. 2002).

requirements, is covered by the patent. Infringement is found if each of the requirements is met by the accused device.²⁹ Because the claim language can be ambiguous and subject to more than one interpretation, the court interprets the claim language and sets forth which of the plausible interpretations will be used.³⁰ Once the court has completed this interpretation process, it is up to the jury to compare the accused device to the patent claims as construed by the court.³¹ If the jury finds that the accused device has all the requirements of a claim, it finds *literal infringement*.³²

This description of the process for determining literal infringement has used the word “requirements” to describe the components of a claim. Note that the court aids jury members to determine what those requirements are before the jury compares the patent claims to the accused device to decide whether infringement has occurred. Both the claim interpretation (or claim construction) by the court and the comparison by the jury are potential sources of uncertainty in the law. The question of how to subdivide claims into requirements is at the heart of the troubling dictum in *Kustom Signals*.

C. Doctrine of Equivalents

Under current law, infringement may also occur under the doctrine of equivalents.³³ If literal infringement were the only kind of infringement, it would perhaps be easier to predict the outcome in infringement actions because the uncertainty would lie principally in the various possibilities of claim construction. However, restricting infringement to literal infringement would also provide opportunities for third parties to commit fraud on patents; the public could use its clear knowledge of the patent boundaries to approach so near to literal infringement that the effect would be the same:

Such a requirement [that the patented device be copied in every detail for infringement to be found] would frustrate the protective potency of the patent laws for the skillful counterfeiter could make

29. See *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 38–39 (1997).

30. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 981 (Fed. Cir. 1995), *aff’d*, 517 U.S. 370 (1996).

31. *Id.*

32. *Graver Tank & Mfg. Co. v. Linde Air Prods. Co.*, 339 U.S. 605, 607 (1950).

33. See *Warner-Jenkinson*, 520 U.S. at 40.

inconsequential changes in the patented device, which though adding nothing, would take his imitation beyond the reach of the law.³⁴

The doctrine of equivalents is used to prevent this kind of counterfeiting. Originating in 1853,³⁵ this doctrine was explained a century later by Justice Jackson: "Equivalence, in the patent law, is not the prisoner of a formula and is not an absolute to be considered in a vacuum. It does not require complete identity for every purpose and in every respect."³⁶ Thus the doctrine of equivalents is used to expand patent rights beyond their literal boundaries to prevent fraud.³⁷ A product infringes through the doctrine of equivalents if it does not contain all the exact requirements in the claim language, but very nearly so.³⁸ Infringement under the doctrine of equivalents is also called *nontextual infringement* because infringement can be found even though the literal textual requirements are not met.³⁹

Courts have divided the test for finding *equivalents* into three parts: function, way, and result.⁴⁰ If the accused device and the patented device accomplish substantially the same function, in the

34. *Love Tractor, Inc. v. Continental Farm Equip. Co.*, 91 F. Supp. 193, 199 (D. Neb. 1950), *rev'd*, 199 F.2d 202 (8th Cir. 1952).

35. *Winans v. Denmead*, 56 U.S. (1 How.) 330 (1853).

36. *Graver Tank*, 339 U.S. at 609.

37. In one famous formulation of this principle, Judge Learned Hand said:

Coming then to the question of infringement, we are first to interpret the claims in the light of disclosure; and both the claims and the disclosure in the setting of the prior art. In these respects a patent is like any other legal instrument; but it is peculiar in this, that after all aids to interpretation have been exhausted, and the scope of the claims has been enlarged as far as the words can be stretched, on proper occasions courts make them cover more than their meaning will bear. If they applied the law with inexorable rigidity, they would never do this, but would remit the patentee to his remedy of re-issue, and that is exactly what they frequently do. Not always, however, for at times they resort to the 'doctrine of equivalents' to temper unsparing logic and prevent an infringer from stealing the benefit of the invention. No doubt, this is, strictly speaking, an anomaly; but it is one which courts have frankly faced and accepted almost from the beginning. All patents are entitled to its benefit to an extent, measured on the one hand by their contribution to the art, and on the other by the degree to which it is necessary to depart from the meaning to reach a just result.

Royal Typewriter Co. v. Remington Rand, Inc., 168 F.2d 691, 692 (2d Cir. 1948) (footnote omitted).

38. See *Warner-Jenkinson*, 520 U.S. at 40; *Graver Tank*, 339 U.S. at 608-09.

39. See *Johnson & Johnston Assocs. v. R.E. Serv. Co.*, 285 F.3d 1046, 1056 (Fed. Cir. 2002).

40. See *Warner-Jenkinson*, 520 U.S. at 39-40; *Graver Tank*, 339 U.S. at 608-09.

substantially the same way, to achieve substantially the same result, the two are found to be equivalent.⁴¹

D. The All Elements Rule

The doctrine of equivalents is meant to prevent fraud on the patent system, but this doctrine is also susceptible to exploitation. Just as unscrupulous and clever infringers can attempt to defraud a patentee (and can be thwarted by the doctrine of equivalents), so can a patentee defraud the public by attempting to extend her patent rights beyond reasonable bounds through the doctrine of equivalents. Patent law has developed restraints on the doctrine of equivalents to prevent this problem. One fundamental restraint is the All Elements Rule.

The All Elements Rule refines the application of the doctrine of equivalents in two important ways. First, it requires that the equivalents analysis focus on matching parts of the claim language to equivalent parts or components (elements) of the accused device.⁴² This aspect of the All Elements Rule comes from the word “elements” in the rule. Thus, the All Elements Rule dictates that the way to determine if a product infringes through the doctrine of equivalents is *not* to examine the product *as a whole* to see if it resembles the claimed invention.⁴³ Rather, the analysis must be a disciplined and systematic one, where each element is compared; the function/way/result analysis must be made “element by element.”⁴⁴

As this Note discusses below, many patent disputes hinge upon what part of the claim language should be the subject of comparison in the function/way/result process. It is clear that the analysis must be made element by element, but how much of the claim language constitutes an element? The question of how to break an invention down into physical elements, coupled with the question of how to break a claim down into sub-parts or language elements, is at the heart of the troubling dictum in *Kustom Signals*.

41. *Warner-Jenkinson*, 520 U.S. at 39–40; *Graver Tank*, 339 U.S. at 608–09; *Union Paper Bag Mach. Co. v. Murphy*, 97 U.S. 120, 125 (1877); *Royal Typewriter*, 168 F.2d at 692.

42. *Warner-Jenkinson*, 520 U.S. at 40.

43. *Pennwalt Corp. v. Durand-Wayland, Inc.*, 833 F.2d 931, 935 (Fed. Cir. 1987).

44. *Id.* This is sometimes known as the “Pennwalt rule.” *Dolly, Inc. v. Spalding & Evenflo Cos.*, 16 F.3d 394, 399 (Fed. Cir. 1994).

The second important way that the All Elements Rule refines the application of the doctrine of equivalents is that it requires each piece or component of the claimed invention to have a corresponding piece or component in the accused device.⁴⁵ Thus, it requires all the claimed elements to be present in the accused device. This aspect of the All Elements Rule comes from the word “all” in the rule. But this aspect of the doctrine of equivalents necessarily dovetails with literal infringement: each of the requirements set forth by a claim must be met either literally or by an equivalent in order for infringement to be found. In other words, a patentee will not succeed in an infringement action if the accused product lacks one of the claimed elements completely,⁴⁶ even if the two products generally accomplish the same result in substantially the same way.⁴⁷ Note that the All Elements Rule helps the accused infringer because it necessitates that each requirement of the claim have a corresponding counterpart in the accused device; the patentee may not successfully assert that the accused device is generally similar to her claimed device without showing this correspondence.

The United States Supreme Court recently helped define the parameters of the current doctrine of equivalents in *Warner-Jenkinson Co. v. Hilton Davis Chemical Co.*⁴⁸ The Supreme Court held that the doctrine was still intact in view of the 1952 Patent Act⁴⁹ and established the All Elements Rule for the doctrine of equivalents.⁵⁰ The Court stated that the reasons for amendments made to claim language during prosecution help determine whether or not the amendments will later give rise to estoppel.⁵¹ The Court also held that the patent holder has the burden of explaining the

45. *Lemelson v. United States*, 752 F.2d 1538, 1551 (Fed. Cir. 1985).

46. *Id.*; see also *Warner-Jenkinson*, 520 U.S. at 39 n.8.

47. However, where the patent drafter has written *comprising claims*—the majority of patent claims are written using the transitional phrase “comprising” to introduce the list of requirements—an accused product will infringe if it contains all the limitations required by the patent and merely *adds* some additional features or steps. See, e.g., *Kustom Signals, Inc. v. Applied Concepts, Inc.*, 264 F.3d 1326, 1332 (Fed. Cir. 2001).

48. 520 U.S. 17 (1997).

49. 35 U.S.C. § 101 (1952).

50. Although the CAFC had already established the rule en banc in *Pennwalt Corp. v. Durand-Wayland, Inc.*, 833 F.2d 931, 935 (Fed. Cir. 1987), *Warner-Jenkinson* represented the first time that the Supreme Court had endorsed the rule.

51. *Warner-Jenkinson*, 520 U.S. at 33. See *infra* Part II.E for a discussion of prosecution history estoppel.

reason for the amendment and defeating the presumption that all amendments are made for “substantial reasons relating to patentability” and thus should give rise to estoppel.⁵²

E. Prosecution History Estoppel

The doctrine of equivalents is thus restrained by the All Elements Rule, but this is not the only safeguard the law places on that doctrine. A second restraint on a patentee’s use of the doctrine of equivalents to unfairly expand patent rights is called *prosecution history estoppel*.⁵³ If a patent applicant—during the course of prosecution—is forced by the examiner to limit her broad claims (thus relinquishing subject matter) in order to meet the requirements of novelty, nonobviousness, and so forth, prosecution history estoppel prohibits her from later reclaiming the relinquished subject matter.⁵⁴ If the applicant limits her claims by making limiting arguments to the patent examiner, the result is *argument-based estoppel*.⁵⁵ If the applicant limits her claims by amending them, the result is *amendment-based estoppel*.⁵⁶ The limitations made during prosecution thus remain in force, and the correspondence between patent attorney and patent examiner serves as a record of these limitations.⁵⁷

A recent Supreme Court case, *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, treated the doctrine of prosecution history estoppel.⁵⁸ In *Festo*, the Court vacated a holding of the CAFC⁵⁹ and reaffirmed the holding of *Warner-Jenkinson* that when a patentee

52. *Warner-Jenkinson*, 520 U.S. at 33.

53. *See id.* at 30.

54. *Southwall Techs., Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1576 (Fed. Cir. 1995).

55. *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 234 F.3d 558, 586 (Fed. Cir. 2000), *vacated by* 122 S. Ct. 1831 (2002).

56. *Id.*

57. “The doctrine of equivalents . . . is not a tool for expanding the protection of a patent after examination has been completed.” *Southwall Techs., Inc.*, 54 F.3d at 1579. Prosecution history estoppel limits the range of equivalents available to a patentee by preventing recapture of subject matter surrendered during prosecution of the patent. *See* *Hormone Research Found., Inc. v. Genentech, Inc.*, 904 F.2d 1558, 1564 (Fed. Cir. 1990); *Townsend Eng’g Co. v. HiTec Co.*, 829 F.2d 1086, 1090 (Fed. Cir. 1987).

58. 122 S. Ct. 1831 (2002). This case was immensely important to the patent bar, has sparked much debate, and has inspired numerous law review articles.

59. The Supreme Court disagreed that a more robust estoppel doctrine was in order, arguing that the established rules should not be changed. *Festo*, 122 S. Ct. at 1841.

amends the claims during patent prosecution without explaining the amendment, prosecution history estoppel is presumed to apply and bars the use of the doctrine of equivalents “as to that element.”⁶⁰ The Court went even further in *Festo*, stating that “[a] patentee’s decision to narrow his claims through amendment may be presumed to be a general disclaimer of the territory between the original claim and the amended claim.”⁶¹ But the Court explicitly held that prosecution history estoppel does not present a complete and insurmountable bar to the doctrine of equivalents: “[a patentee may] rebut the presumption that estoppel bars a claim to equivalence . . . [by showing] that at the time of the amendment one skilled in the art could not reasonably be expected to have drafted a claim that would have literally encompassed the alleged equivalent.”⁶² Although this holding was contrary to the CAFC’s holding below, one aspect of the CAFC’s holding was not reversed by the Supreme Court: when the presumption is not rebutted and prosecution history estoppel does apply, it applies *with respect to the amended element*.⁶³ Thus, determining what constitutes an element is of vital importance under the Supreme Court’s *Festo* rule.

F. “Element” for Prosecution History Estoppel

Neither the CAFC nor the Supreme Court addressed the meaning of the term “element” that is so central to the operation of the *Festo* rule of prosecution history estoppel. The CAFC did, however, explain its view of the difference between the terms “element” and “limitation” in a footnote.⁶⁴ The CAFC explained that, although courts had used the term “element” to refer to words in a claim, the better term for such a use was “limitation.” It explained further that the word “elements” should be used to refer

60. Warner-Jenkinson Co. v. Hilton Davis Chem. Co., 520 U.S. 17, 33 (1997).

61. *Festo*, 122 S. Ct. at 1842.

62. *Id.*

63. See *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 234 F.3d 558, 566 (Fed. Cir. 2000), *vacated by* 122 S. Ct. 1831 (2002).

64. “In our prior cases, we have used both the term ‘element’ and the term ‘limitation’ to refer to words in a claim. . . . It is preferable to use the term ‘limitation’ when referring to claim language and the term ‘element’ when referring to the accused device. . . . However, because the en banc questions use the term ‘element,’ we use that term in this opinion.” *Festo*, 234 F.3d at 563 n.1 (citations omitted).

to portions of the accused device.⁶⁵ Despite this, the CAFC used the term “element” instead of the term “limitation” to refer to portions of the claim language, because in asking the parties to brief issues for the en banc hearing, the court itself had framed the issues using the term “element” rather than the term “limitation.”⁶⁶ This, in turn, was a result of the Supreme Court’s use of the term “element” in the *Warner-Jenkinson* opinion.⁶⁷ The inconsistencies in the terminology of these various courts indicate the growing need for a uniform definition.

The law of prosecution history estoppel under *Festo*⁶⁸ has created a new battleground.⁶⁹ Litigants are now prone to disagree on the meaning of the term “element,” because prosecution history estoppel applies only to those words that constitute the amended element. The larger the relevant element is deemed to be, or the more words or phrases in the section of the claim that comprise the element, the more the patentee is hurt. This is because the estoppel, which bars the patentee from asserting infringement by equivalents, now applies to a larger portion of the claims. If the relevant element consists of only one or two words, the patentee is helped because a larger portion of the claims is not barred from assertions of equivalents.

The *Warner-Jenkinson* and *Festo* opinions have left the patent bar with this burning question: if an element is so important to the rights of patentees under prosecution history estoppel, what exactly *is* an element? The question remains unresolved, but a recent federal case provides a practical example. In *ACLARA Biosciences*,⁷⁰ the court parsed one phrase in the claim at issue into three logical

65. *Id.*

66. *See id.* (“[B]ecause the en banc questions use the term ‘element,’ we use that term in this opinion.”). This strange approach by the CAFC reveals that perhaps the importance of these terms was not as apparent to the court before the opinion was actually written. Subsequent cases, including *Kustom Signals*, continue to reveal their importance.

67. *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17 (1997).

68. The law is that any amendment made to a claim, for a substantial reason relating to patentability, during prosecution of a patent will give rise to a presumption of prosecution history estoppel *with respect to the amended claim element*. *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 122 S. Ct. 1831, 1840, 1842 (2002) (emphasis added); *see also Festo*, 234 F.3d at 566.

69. *Brief for Amicus Curiae*, *supra* note 7, at *9.

70. *ACLARA Biosciences, Inc. v. Caliper Techs. Corp.*, 125 F. Supp. 2d 391 (N.D. Cal. 2000).

parts.⁷¹ The clause was written as follows: “a plurality of electrodes positioned to be in electrical contact with a medium when present in said trenches.”⁷² The court parsed it in the following manner, referring to the word groupings as “components”:

(1) there must be at least two electrodes (“the number of electrodes component”); (2) the electrodes must be in direct contact with the medium when the medium is present in the trenches, but the electrodes themselves do not have to be physically situated in the trenches (“the non-insulation component”); and (3) the electrodes must be positioned at-[sic] intermediate points along the lengthwise axis of a trench, and not just at either end of the trench (“the electrode configuration component”).⁷³

The court also held that, while one of the components had been amended, and thus the prosecution history barred equivalent claims with respect to that component, prosecution history estoppel did not apply to the other two components.⁷⁴ Note that the patentee was allowed to assert equivalents for more of the claim language than would have been allowed if the court had not parsed the clause into three parts.⁷⁵ The court thus advanced the idea that courts should be free to define the element to which the bar applies, defining it to be limited to only a few words in some cases.

G. “Element” for the All Elements Rule

In the context of the All Elements Rule, the prevailing question is similar: what is an element in the wake of *Warner-Jenkinson* and *Festo*? Several cases reveal the difficulty. In *Corning Glass Works v. Sumitomo Electric U.S.A, Inc.*, the CAFC explained: “‘Element’ may be used to mean a single limitation, but it has also been used to

71. “To clarify, it is useful to isolate the various components of the ‘plurality of electrodes’ limitation. According to the Court’s previous orders, the phrase [in question] contains three separate requirements. . . .” *Id.* at 400.

72. *Id.* at 392.

73. *Id.* at 400.

74. *Id.*

75. In the end, the court held that since ACLARA had never amended the claim to alter what the patent taught about the placement of electrodes, “no potential competitor was left wondering what range of equivalents a fact finder might apply in deciding whether some other electrode configuration was substantially similar.” *Id.* at 401. The court pointed out that this amendment did not implicate “[t]he Federal Circuit’s concerns about fostering innovation, reducing litigation, and minimizing the uncertainty facing the public.” *Id.* at 402.

mean a series of limitations which, taken together, make up a component of the claimed invention.”⁷⁶ The same court also referred to this question when it said that “[r]eferences to ‘elements’ can be misleading. . . . [C]larity is advanced when sufficient wording is employed to indicate when ‘element[]’ is intended to mean a component . . . of an embodiment of an invention and when it is intended to mean a feature set forth in or as a limitation in a claim.”⁷⁷ Thus, the CAFC has explained that in the context of the All Elements Rule, an element can be a relatively large or small grouping of the words in a claim; the same uncertainty in definition that has burdened courts in the context of prosecution history estoppel is also a problem in this context. But *Corning Glass* is most quoted for a further clarification between “elements” and “limitations.” The All Elements Rule can also be thought of as the *All Limitations Rule*: “[For the All Elements Rule,] [a]n equivalent must be found for every limitation of the claim somewhere in an accused device, but not necessarily in a corresponding component, although that is generally the case.”⁷⁸ The CAFC further clarified five years later:

This language [in *Corning Glass*] . . . did not alter the *Pennwalt* rule to create a more expansive test for infringement under the doctrine of equivalents. This language in *Corning Glass* did not substitute a broader limitation-by-limitation comparison for the doctrine of equivalents than the element-by-element comparison in *Pennwalt*. Rather, the *Corning Glass* court merely clarified the meaning of the term “element” in the context of the *Pennwalt* rule.⁷⁹

This clarification—showing a certain interchangeability between the terms “element” and “limitation”—is useful, but it still does not answer the question of what portion of claim language makes up an element/limitation.

Nevertheless, the courts have not had the same explicit disagreement about the definition of an element in the context of the All Elements Rule as they have had in the context of prosecution

76. *Corning Glass Works v. Sumitomo Elec. U.S.A., Inc.*, 868 F.2d 1251, 1259 (Fed. Cir. 1989).

77. *Perkin-Elmer Corp. v. Westinghouse Elec. Corp.*, 822 F.2d 1528, 1533 n.9 (Fed. Cir. 1987).

78. *Corning Glass*, 868 F.2d at 1259.

79. *Dolly, Inc. v. Spalding & Evenflo Cos.*, 16 F.3d 394, 399 (Fed. Cir. 1994).

history estoppel. Indeed, the courts have often implicitly assumed the definition of an element for purposes of this rule.⁸⁰

In *Kustom Signals*,⁸¹ these implicit assumptions are taken one step further. The CAFC seems to say that not only *can* an element consist of a portion of claim language containing many words and clauses, but in order to be an element, it *must* contain more than the single word “or”—no matter how significant a role that word might play in the claims.⁸²

III. *KUSTOM SIGNALS, INC., V. APPLIED CONCEPTS, INC.*

A. Background

In the U.S. District Court for the District of Kansas, Kustom Signals, Inc. sued Applied Concepts, Inc. for infringement of a patent on traffic radar technology (the ‘246 patent).⁸³ The court granted summary judgment finding noninfringement on two grounds: (1) no literal infringement,⁸⁴ and (2) no doctrine of equivalents infringement because of the All Elements Rule.⁸⁵ Kustom Signals appealed to the CAFC.⁸⁶ On appeal, the CAFC affirmed the grant of summary judgment under two theories: no literal

80. In the *Corning Glass* case, the following group of limiting words was considered an element: “to which a dopant material has been added to a degree in excess of that of the cladding layer.” *Corning Glass*, 868 F.2d at 1260. In a Court of Federal Claims case, an element was a numbered portion of a claim: “(3) a locking means, for selectively engaging (for two of the four axis [sic]) and disengaging (for the other two of the four axis [sic]) the two respective control means, in a collective helicopter control mechanism.” *Messerschmidt v. United States*, 29 Fed. Cl. 1, 54 (1993). The court refers to it as “a locking device” for short. *Id.* In the CAFC’s *Dolly* case, an element was a lettered part of a claim: “(d) a stable rigid frame which is formed in part from said side panels and which along with said seat panel and said back panel provides a body supporting feature, said stable rigid frame being self-supporting and free standing, whereby the said child’s chair is readily portable and easily stored.” *Dolly*, 16 F.3d at 396. The court refers to it as the “stable rigid frame limitation.” *Id.* at 398.

81. *Kustom Signals, Inc. v. Applied Concepts, Inc.*, 264 F.3d 1326 (Fed. Cir. 2001), *cert. denied*, 122 S. Ct. 1537 (2002).

82. *Id.* at 1333.

83. U.S. Patent No. 5,528,246 (issued June 18, 1996). *See* *Kustom Signals, Inc. v. Applied Concepts, Inc.*, 52 F. Supp. 2d 1260 (D. Kan. 1999), *aff’d*, 264 F.3d 1326 (Fed. Cir. 2001), *cert. denied*, 122 S. Ct. 1537 (2002).

84. *Id.* at 1276.

85. *Id.* at 1283.

86. *Kustom Signals*, 264 F.3d 1326.

infringement,⁸⁷ and no infringement through equivalents because of prosecution history estoppel.⁸⁸ The All Elements Rule, on the other hand, was found not to bar the application of the doctrine of equivalents.⁸⁹

The technology at issue in this case was the traffic radar devices used by law enforcement officers to detect speeding cars. Traffic radar devices send radio signals toward moving vehicles and then analyze the rebound signals to determine characteristics about the vehicles such as speed. Both the claimed Kustom Signals radar and the accused Applied Concepts radar use Fast Fourier Transforms to digitally process the return signals, and each radar allows identification and analysis of, not only the fastest return signal, but also the strongest return signal.⁹⁰ This two-fold analysis had been possible in older analog radars, but the Kustom Signals radar was the first digital radar to incorporate this analysis.⁹¹

Both radars have a form of “multi-mode” operation, including a mode switch, but there is one key difference. The disclosed Kustom Signals radar processes the data to a certain point and finishes the processing only upon the radar operator’s selection of a mode. The radar operator may flip the switch, choosing to display the speed of the fastest-moving vehicle or the vehicle that returns the strongest signal.⁹² By contrast, the accused Applied Concepts radar fully processes the return data, making either result available to be viewed upon demand; the mode switch merely allows the operator to select whether to *display* the speed of the fastest or the strongest signal, not whether to *process* the data to determine the speed of the selected signal and *then* display the result.⁹³

B. Claim Terms at Issue

As was emphasized above, any analysis of a patent case must begin with a discussion of the language employed in the claims. In

87. *Id.* at 1332.

88. *Id.* at 1333.

89. *Id.*

90. *Kustom Signals*, 52 F. Supp. 2d at 1264–65.

91. *Id.*

92. *Kustom Signals*, 264 F.3d at 1328–29; *see also Kustom Signals*, 52 F. Supp. 2d at 1264–65. The strongest signal usually comes from the closest or largest target. *Kustom Signals*, 52 F. Supp. 2d at 1264.

93. *Kustom Signals*, 264 F.3d at 1329.

three distinct claims in the ‘246 patent, Kustom Signals employed the term “or.”⁹⁴ Claim 1[e]: “A method . . . comprising the step[] of . . . searching said components in memory for the component that meets preselected magnitude *or* frequency criteria”; Claim 16[d]: “In a traffic radar, apparatus . . . comprising . . . means for searching the components stored in said memory means to identify the component that meets preselected magnitude *or* frequency criteria”; and Claim 20[f]: “In a traffic radar, apparatus . . . comprising . . . means under operator control for selecting *either* a greatest magnitude *or* highest frequency search, whereby *either* strongest signal *or* fastest signal target identification is provided.”⁹⁵

During prosecution of this patent, the attorney inserted the term “or” in clause 1[e] in place of the word “and” as a result of a rejection for obviousness over another radar system associated with Patent No. 3,631,486 to Anders.⁹⁶ The “or” in clause 16[d] was added for the same reason. The “either” and “or” terminology in clause 20[f] was already in the claim before the rejection.⁹⁷

“The district court construed the term ‘or’ to mean a choice between either one of two alternatives, but not both.”⁹⁸ Kustom Signals argued on appeal that “or” should have been construed in the logical operator sense: “[or] returns a ‘true’ value when one or both values are true,” as distinguished from “exclusive or,” which “returns a ‘true’ value when *only* one value is true.”⁹⁹ The CAFC affirmed the district court’s claim construction, holding that Kustom signals did not show that it intended anything other than the common usage of “or” and “either” to designate alternatives.¹⁰⁰ The

94. *Id.* at 1330.

95. *Id.* at 1329–30 (emphasis and clause letters added by the CAFC).

96. The Anders patent is a piece of prior art with the potential to disqualify the ‘246 patent, but it is not relevant to this Note other than in the role described here.

97. The CAFC called attention to comments made by Kustom’s attorney during prosecution of the patent: “‘Claim [20] specifically calls for two search modes under operator selection.’ Kustom described its invention as having ‘multi-mode operation,’ whereby the desired mode . . . would be selected by the operator. It is apparent that the modes of search and display were intended, in the ‘246 invention, to be selected in the alternative.” *Kustom Signals*, 264 F.3d at 1331.

98. *Id.* at 1330.

99. *Id.* at 1330–31.

100. *Id.* at 1332. This claim interpretation may seem strange given the technical context of the patent, but the court relied on the default (plain meaning) approach to interpretation. The district court analyzed detailed flow charts in the specification and concluded that the plain meaning was intended. *Id.* at 1331.

CAFC stated that the limiting term “or” requires the exclusion of devices whose memory search includes magnitude *and* frequency.¹⁰¹

C. Literal Infringement

The CAFC, like the district court, pursued a three-part infringement analysis, agreeing with two of the three holdings from the court below.¹⁰² The CAFC first analyzed literal infringement.¹⁰³ Kustom Signals argued before the CAFC that the further processing by the Applied Concepts radar—wherein it calculates for the strongest signal as well, despite being in fastest signal mode (or vice-versa)—is simply an additional function and that “performance of an additional step is irrelevant when the claimed steps are performed.”¹⁰⁴ Thus, Kustom Signals asserted that the accused device completely overlapped with Kustom’s patent, and the mere addition of additional features did not negate the infringement.¹⁰⁵ For this result, Kustom Signals relied on its use of the term “comprising” to introduce its patent claims because that term “opens a method claim to the inclusion of steps in addition to those stated in the claim.”¹⁰⁶ However, the court found that in the ‘246 patent the “clause imposing the limiting term ‘or’ requires the exclusion of devices whose memory search includes magnitude and frequency”¹⁰⁷; therefore, there was no literal infringement.¹⁰⁸

D. Infringement Under the Doctrine of Equivalents

The second two infringement analyses dealt with alternative theories under the doctrine of equivalents—one under the All Elements Rule and one under prosecution history estoppel. Under

101. *Kustom Signals*, 264 F.3d at 1333; *Kustom Signals, Inc. v. Applied Concepts, Inc.*, 52 F. Supp. 2d 1260, 1279 (D. Kan. 1999).

102. *Kustom Signals*, 264 F.3d at 1332–33.

103. *Id.* at 1332.

104. *Id.*

105. *Id.*; *see also* *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 39 (1997).

106. *Kustom Signals*, 264 F.3d at 1332; *see also* *Moleculon Research Corp. v. CBS Inc.*, 793 F.2d 1261, 1271 (Fed. Cir. 1986).

107. *Kustom Signals*, 264 F.3d at 1332.

108. “The district court correctly held that the accused device, by its search of both magnitude and frequency without operator instruction, is outside the literal scope of the claims.” *Id.* at 1333.

each analysis, the district court had found no infringement. The district court’s All Elements reasoning was that “finding the accused device equivalent to the claimed invention would eliminate the ‘or’ element of the claims, thereby violating the [A]ll [E]lements [R]ule.”¹⁰⁹ The district court described the element to which it referred as follows: “One of the elements of Claims 1, 16, and 20 is that the radar searches and displays either the strongest or fastest target but not both. This selective display element, or its equivalent, is absent from the . . . [Applied Concepts] radar.”¹¹⁰

The CAFC disagreed with the district court’s application of the All Elements Rule, stating that “[t]he word ‘or’ is not itself an ‘element’ of an apparatus or a step of a method, and its presence to signify alternative elements does not convert ‘or’ into an element.”¹¹¹ This announcement is amazing since, just paragraphs earlier, the court had affirmed that there was no literal infringement on the sole ground that the limitation imposed on the claim by the word “or” was not met by the accused device. It makes one wonder: if the word “or” can impose limitations for purposes of literal infringement, why is it not an element for purposes of the doctrine of equivalents?¹¹²

Despite disagreeing with the district court’s All Elements analysis, the reviewing court held that prosecution history estoppel limited Kustom Signals’ claim of infringement under the doctrine of equivalents; the court affirmed the grant of summary judgment on this alternative ground.¹¹³ The CAFC held that both kinds of prosecution history estoppel applied: amendment-based estoppel (invoked by Kustom Signal’s amendment to claim terms 1 and 16)¹¹⁴ and argument-based estoppel (invoked by Kustom Signal’s

109. *Id.*

110. *Kustom Signals, Inc. v. Applied Concepts, Inc.*, 52 F. Supp. 2d 1260, 1279 (D. Kan. 1999).

111. *Kustom Signals*, 264 F.3d at 1333.

112. This question reveals the main problem with the troubling dictum in the *Kustom Signals* case. Literal infringement and infringement by the doctrine of equivalents are parallel and alternative analyses, and both are asserted together in countless patent cases. If a word is considered important under one of the two analyses, there seems to be little reason that it would not also be important in the other analysis. This is especially true when the word is important in the literal infringement analysis because literal infringement is by its very terms more exacting than infringement by equivalents.

113. *Kustom Signals*, 264 F.3d at 1333.

114. Invoked with respect to clause 1[e] and 16[d]. *Id.*

arguments distinguishing claim 20 from prior art).¹¹⁵ Thus, the CAFC affirmed both holdings of the court below (no literal infringement and no infringement under the doctrine of equivalents) but used different reasoning than the district court to arrive at the second result.

IV. ANALYSIS

The troubling dictum from the CAFC in *Kustom Signals* demonstrates the confusion in patent law over the definition of the term “element.” Given that the term has more than one definition even in this specialized area of the law, it is understandable that this confusion exists. The confusion is also a result of the rapid growth of patent law and the continuing evolution of its governing rules. The CAFC has taken some steps to clarify the meanings of the terms “element” and “limitation,”¹¹⁶ but more is needed. In particular, two steps are needed to clear away the confusion associated with these definitions. First, the word “element” must be completely eliminated from prosecution history estoppel and from the All Elements Rule, and the word “limitation” must replace it. Second, the size of a limitation must be determined from the prosecution history and from comparison to the prior art. This analysis will show how the result in *Kustom Signals* would be harmonized by this approach, and this analysis will also show the viability and implications of these two steps.

A. Elimination of the term “element”

The first step toward clarification of the claim language terminology will be to eliminate the term “element” and replace it with the less ambiguous term “limitation.” The term “element” has at least two different meanings in the context of patent law, and its use breeds confusion.¹¹⁷ One meaning of “element” refers to a physical component of a device.¹¹⁸ Another meaning of “element”

115. Invoked with respect to clause 20[f]. *Id.*; see *supra* note 97.

116. See *Corning Glass Works v. Sumitomo Elec. U.S.A., Inc.*, 868 F.2d 1251, 1259 (Fed. Cir. 1989).

117. See *Brief for Amicus Curiae*, *supra* note 7, at *6–*13.

118. *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 234 F.3d 558, 563 n.1 (Fed. Cir. 2000), *vacated by* 122 S. Ct. 1831 (2002).

refers to a word or group of words in a claim.¹¹⁹ These two meanings are especially confusing in definitions and analysis of patent law because, in the patent context, devices are constantly being compared to descriptive language. At first it may seem convenient to use the term “element” to refer to both a physical component of a device and the corresponding words in claim language that describe that physical element. However, this same convenience leads to imprecision.

“Limitation,” on the other hand, has no such dual identity. The courts have used this word consistently to refer to the language of the claims, and they have never used this term to refer to the embodiments of that language—the components of a device.¹²⁰ Not only is the word “limitation” inherently less confusing because of its consistent historical use, but the proposed conversion from “element” to “limitation” is already underway in patent law. The CAFC has already started to change from using the word “element” to emphasizing the basic underlying component of the claims—the limiting words themselves.¹²¹

1. “Limitation” is a better fit for prosecution history estoppel

One sign that the shift has already started from “element” to “limitation” is the *Festo* footnote, which suggested that between the words “limitation” and “element,” “limitation” is more suited to describe portions of claim language.¹²² Indeed, this footnote identifies “element” with the concrete realm of embodiments, using “element” to apply only to portions of an accused device. This essentially eliminates the term “element” from prosecution history estoppel because the accused device is not the focus of that analysis. Prosecution history estoppel just involves the statements and actions of the claim drafter—the amendments made to claim language or the limiting arguments made to the examiner. Both of these, on a

119. *Id.*; see also *ACLARA Biosciences, Inc. v. Caliper Techs. Corp.*, 125 F. Supp. 2d 391, 402 (N.D. Cal. 2000).

120. See *supra* Part II.F–G.

121. *Festo*, 234 F.3d at 563 n.1; see also *Perkin-Elmer Corp. v. Westinghouse Elec. Corp.*, 822 F.2d 1528, 1533 n.9 (Fed. Cir. 1987); *Corning Glass Works v. Sumitomo Elec. U.S.A., Inc.*, 868 F.2d 1251, 1259 (Fed. Cir. 1989); *Dolly, Inc. v. Spalding & Evenflo Cos.*, 16 F.3d 394, 399 (Fed. Cir. 1994).

122. *Festo*, 234 F.3d at 563 n.1; see also *Perkin-Elmer Corp.*, 822 F.2d at 1533 n.9.

fundamental level, involve limiting language and have very little to do directly with an embodiment of the invention.¹²³

The notice function of claims and the desirability of clear disclosure to the public militate for elimination of the term “element” from the context of prosecution history estoppel. The Supreme Court acknowledged in *Festo* that “clarity is essential to promote progress, because it enables efficient investment in innovation. A patent owner should know what he owns, and the public should know what he does not [own].”¹²⁴ Through eliminating a term with two distinct definitions, the possibility for confusion will be decreased. The CAFC noted in *Corning Glass* that “clarity is advanced when sufficient wording is employed to indicate when ‘elements’ is intended to mean a component . . . of an embodiment of an invention and when it is intended to mean a feature set forth in or as a limitation in a claim.” Clarity could be even further advanced if the dual-definition word was abandoned completely and the defining words—embodiment and limitation—were employed in its place.¹²⁵

The change away from “element” would fit with the *ACLARA* court’s “nuanced approach”¹²⁶ to prosecution history estoppel. The *ACLARA* court extols a “limited rule that evaluates closely which specific portion of amended claim language is consistent with the meaning of the term ‘limitation.’”¹²⁷ The *ACLARA* court cites authorities that decry the confusion created by the two meanings of “element,” and then summarizes the two meanings in a way that does not require the word “element” at all.¹²⁸

123. *Corning Glass*, 868 F.2d at 1259.

124. *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 122 S. Ct. 1831, 1837 (2002).

125. Stated in more abstract terms, the current problem is one of multiple definition. Because multiple definitions have been assigned to one name, it is probably best to reassign those definitions, each to a separate name. This Note emphasizes the utility of the word “limitation” because it is useful in the context of prosecution history estoppel and the All Elements Rule. While “limitation” is the clear choice for one of the multiple meanings, several words would suffice for the other meaning. Physical embodiment, portion, or component are all candidates. “Embodiment” is suggested here because it demonstrates the link between words and their physical counterparts.

126. A recent federal case thus referred to the *ACLARA* approach. *Creo Prods., Inc. v. Presstek, Inc.*, No. CIV.A.99-525-GMS, 2001 WL 637397, at *9 (D. Del. May 11, 2001).

127. *ACLARA Biosciences, Inc. v. Caliper Techs. Corp.*, 125 F. Supp. 2d 391, 402 (N.D. Cal. 2000).

128. “Element” appears in a parenthetical: “These authorities suggest that a single clause

Eliminating the term “element” would be consistent with the two recent landmark Supreme Court cases concerning patent law. Indeed, the Supreme Court did nothing to discourage the elimination of the term in either the *Warner-Jenkinson* or the *Festo* cases. Although *Festo* reaffirmed the doctrine of equivalents and used the term “element,” consistent with former use of that word, the term “limitation” could have replaced the term “element” with no change in the result of either *Warner-Jenkinson* or *Festo*.

2. “All Limitations Rule” is a better fit for current law than “All Elements Rule”

At first blush, the change from “element” to “limitation” for purposes of the All Elements Rule might seem to be a drastic change because the rule itself contains the word “elements.” However, the shift has already begun from “element” to “limitation” in this context as well. For example, the court in *Corning Glass* explained that comparison of the claims with the accused product should actually be according to limitations: “[For the All Elements Rule], [a]n equivalent must be found for every limitation of the claim somewhere in an accused device, but not necessarily in a corresponding component, although that is generally the case.”¹²⁹ In other words, the elements (i.e., physical components) of the claimed invention and the accused product do not have to be compared at all. The limitations of the claim must be compared to the accused device.¹³⁰

The CAFC later confirmed the idea that changing from an “elements” formulation to a “limitations” formulation of the rule

in a claim describing one particular physical structure (an “element” of a device embodying the invention) can contain several limitations. In other words, every clause in a claim is not a discrete limitation; instead, a clause can contain one or more limitations.” *ACLARA*, 125 F. Supp. 2d at 402. Another federal case also manages to avoid the word “element” completely: “[The question is] whether the ‘complete bar’ . . . applies when only *a portion of the claim language* was amended during the patent prosecution and the parties dispute whether the amendment altered *one limitation* within a claim or a *series of limitations*[.]” *Creo Prods.*, 2001 WL 637397, at *9 (emphasis added).

129. *Corning Glass Works v. Sumitomo Elec. U.S.A., Inc.*, 868 F.2d 1251, 1259 (Fed. Cir. 1989).

130. Limitations drive the infringement analysis. Each requirement of the claim is analyzed in turn, and for each of those limitations, a corresponding element is sought in the accused device. Because it is the limitations that matter most for purposes of this comparison process, the specific word “limitation” should take the place of the more confusing word “element.”

does not change the rule, but rather clarifies it: “[T]he *Corning Glass* court *merely clarified* the meaning of the term ‘element’ in the context of the *Pennwalt* rule.”¹³¹ The CAFC has not limited itself to hints about the propriety of the term “limitation.” As early as 1989, the CAFC explicitly endorsed such a wording in *Johnston v. IVAC Corp.*¹³²: “A more precise name [for the All Elements Rule] would be the All Limitations Rule.”¹³³

Aside from the CAFC’s endorsement of the proposed change from “element” to “limitation,” there is a logical, grammar-based reason for the change. Because courts have sometimes used “element” to refer to a group of limiting words in the claim language, “limitation” has consistently identified the smaller segment of claim language. Thus, “limitation” is the more inclusive word in the sense that all the elements will be automatically present if all the limitations are present. Indeed, if each limitation of a claim is met in an accused device, each element is necessarily met with no further analysis needed. Furthermore, as the *Corning Glass* court explained, the way elements are organized in a claim need not correspond to the way components of an invention are organized, except that the underlying limitations must all be present.¹³⁴ Limitations are the true, discrete, functional building blocks of the claims. By focusing the All Limitations Rule and prosecution history estoppel on the fundamental building blocks of the claims, confusion will be minimized.

B. Definition of “Limitation”

Solidifying the change in terminology from “element” to “limitation” is not the only step that will be needed to clarify the doctrine of equivalents and its related rules. The fundamental policies of patent law also require that the term “limitation” be

131. *Dolly, Inc. v. Spalding & Evenflo Cos.*, 16 F.3d 394, 399 (Fed. Cir. 1994) (emphasis added).

132. 885 F.2d 1574, 1578 n.3 (Fed. Cir. 1989).

133. The CAFC further cemented this idea in 1998 and 1999. *Sextant Avionique, S.A. v. Analog Devices, Inc.*, 172 F.3d 817, 826 (Fed. Cir. 1999); *Ethicon Endo-Surgery, Inc. v. United States Surgical Corp.*, 149 F.3d 1309, 1317 n.* (Fed. Cir. 1998).

134. An equivalent must be found for every limitation of the claim somewhere in an accused device, but not necessarily in a corresponding component, although that is generally the case. *Corning Glass Works v. Sumitomo Elec. U.S.A., Inc.*, 868 F.2d 1251, 1259 (Fed. Cir. 1989).

defined.¹³⁵ It must be defined so that the patentee knows what will later be considered a limitation if the claims are involved in litigation. It must be defined so that those who read the issued patent and the prosecution history will know which words in the claim can be read literally and which must be read with an eye to possible equivalents. A working definition is needed for the stability of industry and the economy. Inventors and their competitors must be allowed to predict with accuracy what the courts will consider to be a limitation.¹³⁶

The best way to define the size of a limitation is to do it with reference to a limiting act. This approach to a definition is practical because it does not divorce the function of the words in the literal infringement context from their role in the doctrine of equivalents context. Arbitrary form must not be exalted above practical function.

The limiting act can be the drafting of a claim, an argument made to an examiner, an amendment made in response to the examiner’s rejection, or even inclusion of unnecessary language in the claim. Said alternatively, the key to defining the size of a limitation will be determining from context the actual effect of the language. The drafting of every claim is of course a limiting act. Each word, clause, and sentence helps to define the scope of the claimed subject matter. But the court must group the words into functional units—as small as a single word or as large as a full clause. If there has been an amendment, the question will be: what does the claim as amended require that was not required by the language before amendment? If a patentee limits her rights through argument or amendment-based prosecution, that act defines a limitation. If a patentee limits her rights by including an unnecessary limitation, then the All Limitations Rule is binding and lesser-included inventions will not infringe.¹³⁷ By contrast, a patentees’ preliminary

135. *Brief for Amicus Curiae*, *supra* note 7, at *6–*9.

136. It may be argued that if replacing “element” with “limitation” is not enough, and “limitation” must still be defined, there is no purpose for replacing “element” in the first place. Perhaps it would be more feasible just to define “element” more clearly. However, this has already been attempted by various courts, as discussed above. *See supra* Part IV.A. Both a word change and a clear definition will be required for clarity and consistency in this area of the law.

137. Lesser-included inventions are those that meet some of the requirements of the claims, but not all of them. Under this scenario, just because the only limitation not met by the accused device happens to be a peripheral or unimportant limitation does not mean that the device infringes. The claim drafter is rightfully estopped as a result of including an extraneous limitation. *See Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 33–34 (1997).

formatting of the claims is not as significant as word choice. Indentation and spacing should not be considered a sufficient conscious, limiting act. In sum, the meaning of “limitation” should be tied to a conscious, limiting act—such as the original drafting (or subsequent insertion) of a word in a patent claim; it should not be tied to the patentee’s original formatting or superficial organization of claims.¹³⁸

Various wordings could be used to define “limitation” on this basis. However, in substance, the definition should be as follows: a limitation is a word or group of words that functions to define the metes and bounds of a claim, distinguishing the invention from other processes, machines, manufactures, or compositions of matter. When the question is whether prosecution history estoppel should apply, one way of formulating the definition is as follows: a single limitation is any word or words added by amendment or argument that reflect(s) a single, new requirement added to the claims.¹³⁹ This definition focuses on the limiting act by emphasizing the functions of the words—to define, distinguish, or require.¹⁴⁰ Significant to the *Kustoms Signals* analysis, this definition also allows for the possibility that one word can indeed be a bona fide limitation.

1. Implications of the proposed definition for the All Limitations Rule

The proposed definition is not a drastic change from the definitions implicitly assumed by the courts in recent years for the All Elements Rule. The proposed definition does explicitly convey, however, that even a single word can have a limiting effect—enough to be considered, in itself, a limitation. The dictum in the *Kustom*

138. *But see* 37 C.F.R. § 1.75(i) (2002).

139. Note that argument-based estoppel and amendment-based estoppel are not very different. An amendment is visible on the face of the claims themselves, but any argument recorded by the PTO is also a matter of public record. Argument-based estoppel relies on a footnote to the claims, while amendment-based estoppel relies on the claims themselves.

140. Note that by tying the definition of “limitation” to a conscious, limiting act—or by giving it a functional, practical definition—the size of a limitation will be determined with reference to the prosecution history and comparison to the prior art. Just as obviousness is determined at the time the application was filed, the functional effect of a limiting act must be determined when that limiting act is made. To analyze the effect of an amendment, for example, a snapshot of the extant, contemporaneous prior art must be considered. After-arising equivalents must not be allowed to erode patent rights. *See Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 234 F.3d 558, 619 (Fed. Cir. 2000) (Rader, J., dissenting), *vacated by* 122 S. Ct. 1831 (2002).

Signals case is troubling because it does not recognize this fact in the context of the All Elements Rule. The proposed definition would change the result of the CAFC’s All Elements analysis in *Kustom Signals*, bringing it in line with current patent law and good patent policy.¹⁴¹

The proposed definition would bring harmony to the CAFC’s three-part analysis in *Kustom Signals*. As it stands, the *Kustom Signals* analysis is incongruous and even seems contradictory. The literal infringement result—that the “or” claim requirement defeats any argument of literal infringement—is completely inconsistent with the result of the All Elements analysis—that the “or” claim requirement is not an element for purposes of the All Elements Rule.¹⁴² That a single word in a claim can have enough stature and effect to defeat literal infringement may not be too startling, given the strict parallel that must exist in an accused product for literal infringement to be found. But the court’s assertion that the same word has absolutely no affect in the non-literal, equivalents analysis seems ludicrous, given its weight in the literal arena. The court does, however, consider “or” to be a “limiting term.”¹⁴³ Thus, under the proposed rule, the word’s impact as a literal limitation would assure the word’s status as a limitation for purposes of the All Limitations Rule.

2. Implications of the definition for prosecution history estoppel

Under the proposed definition of “limitation” as any word or words added by amendment that reflect(s) a new requirement added to the claims, the test for prosecution history estoppel would be to determine if the accused device does or does not meet that new requirement. Under the facts presented in the *Kustom Signals* case, the application of the proposed rule would be straightforward. In that case, during prosecution of the patent, the word “and” was

141. In particular, it would resolve both the incongruity between the role a single word can play in prosecution history estoppel analysis and the role of the same word in All Elements Rule analysis. Thus, consistency and the notice function would both be served. See *Perkin-Elmer Corp. v. Westinghouse Elec. Corp.*, 822 F.2d 1528, 1533 n.9 (Fed. Cir. 1987); *Festo*, 234 F.3d at 574–75; see also *Brief for Amicus Curiae*, *supra* note 7, at *10–*13.

142. “The word ‘or’ is not itself an ‘element’ of an apparatus or a step of a method, and its presence to signify alternative elements does not convert ‘or’ into an element.” *Kustom Signals, Inc. v. Applied Concepts, Inc.*, 264 F.3d 1326, 1333 (Fed. Cir. 2001).

143. *Id.* at 1332.

replaced with the word “or.”¹⁴⁴ This substitution constituted a new requirement, added to the claims. Furthermore, this substitution changed the meaning of the claims so that they no longer covered a device that performed both functions at once, as had been required when the claims had used “and.” With the new word—“or”—in place, the claims required one function or the other to be performed, but not both simultaneously. The accused device did not meet that new requirement; it performed both functions at once, and would thus have been, under the proposed rule, beyond the reach of the claims, even under the doctrine of equivalents.

This analysis under the proposed definition for “limitation” comports with the actual holding of *Kustom Signals* concerning prosecution history estoppel:

The district court correctly concluded that the prosecution history estops Kustom from relying on the position that a device which searches for both fastest and strongest targets performs substantially the same function as a device which searches for either the fastest or the strongest target. During prosecution . . . Kustom amended claims 1 and 16 to include this limitation. . . . We affirm the grant of summary judgment of noninfringement on this alternative ground.¹⁴⁵

The CAFC itself recognized that an amendment adding the limitation “or” to claim language was sufficient to estop the patentee from later claiming that an “and” device was an equivalent.

In the context of prosecution history estoppel, the greatest benefit of a limitation defined by the actual requirement it adds is that the notice function of the claims is thus maximized.¹⁴⁶ The CAFC announced the primacy of the notice function with great fanfare in its *Festo* decision, and the Supreme Court acknowledged the importance of this policy.¹⁴⁷ The proposed definition would

144. *Id.* at 1330.

145. *Id.*

146. Indeed, *any* definition of “element” or “limitation” would enhance the notice function of claims, since the courts have not yet defined either of these terms. The value of the proposed definition is deeper than this, however.

147. See *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 234 F.3d 558, 586 (Fed. Cir. 2000), *vacated by* 122 S. Ct. 1831 (2002); *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 122 S. Ct. 1831, 1837–40 (2002). In vacating the CAFC’s *Festo* decision, the Supreme Court actually emphasized the policy the CAFC had purportedly exalted in its *Festo* decision—that of consistency and predictability. The Supreme Court pointed out that “the doctrine of equivalents and . . . prosecution history estoppel are settled law” and that the

allow competitors to examine the prosecution history and the claim language to determine if in fact any limitations distinguished the claimed invention from the competitor’s product or method. If any arguments or amendments indicated the metes and bounds¹⁴⁸ of the claimed invention, the competitor would simply note the specific characteristics affected. The competitor’s analysis would focus on the limiting effect of the argument or the amendment.

Another benefit of the proposed definition for limitation is that it does not require the court to determine intent and to search for the true underlying reason for the amendment. Rather than gathering evidence on whether or not the patentee intended to amend for a reason substantially related to patentability, the court could instead focus on the practical limiting effect of the amendment itself.¹⁴⁹ The limiting effect is much easier to determine than the patentee’s intent, especially given that litigation often arises many years after amendments are made.

3. Consistent definitions for prosecution history estoppel and the All Limitations Rule

The proposed definition would solve a further incongruity in *Kustom Signals*: the clash between the All Elements analysis and the prosecution history estoppel analysis in that case. On the one hand, the court does not consider “or” to be an element for purposes of

CAFC should not have tried to “disrupt the settled expectations of the inventing community.” *Festo*, 122 S. Ct. at 1841.

148. The terms “metes and bounds” have long been used in the patent context to illustrate the similarities between a legal description of real property, where the borders and boundaries of a parcel of land are clearly described, and the language of a patent claim. See *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 29 (1997).

149. The proposed definition for “limitation” would also be completely consistent with the *ACLARA* decision, and the *ACLARA* analysis provides a clear example of how the proposed definition of “limitation” should be applied. The *ACLARA* court does not discuss the reasons for the amendment; rather, it focuses on how the groups of words function to define the claimed invention and distinguish it from the prior art. In *ACLARA*, the patentee amended one of two adjacent limitations during prosecution of the patent application. The court held that such an amendment did not limit the doctrine of equivalents for the adjacent but un-amended limitation. The court placed the focus on the actual requirement added by the amendment, holding that “*ACLARA*’s amendment did not alter the electrode configuration component of the ‘plurality of electrodes’ clause. *ACLARA* did not surrender any subject matter related to where along the trenches the electrodes should be placed; its amendment was limited to whether the electrodes should be insulated from the medium.” *ACLARA Biosciences, Inc. v. Caliper Techs. Corp.*, 125 F. Supp. 2d 391, 402 (N.D. Cal. 2000).

the All Elements Rule. However, under the subsequent analysis, “or” is considered to be a significant limitation—so significant that it triggers prosecution history estoppel.¹⁵⁰ The CAFC finds that the very limitation that successfully distinguished the invention from prior art during prosecution has no stature when the invention is compared to possibly infringing products. Possibly infringing products may infringe even if they lack the limitation that was so important during prosecution. In other words, the court finds that the same word in the same claims and context is not an element but is a limitation. This inconsistency would be completely reconciled under the proposed definition. Not only would the change eliminate confusion between the terms “element” and “limitation” by eliminating the former, but it would also establish that a word that is sufficient to distinguish from prior art is also a significant factor—a limitation—in the All Limitations analysis.

The proposed definition would have more wide-reaching benefits than simply to harmonize the three analyses in the *Kustom Signals* case; it would also help to harmonize patent law. A consistent definition of “limitation” is a good idea for several reasons. Congress recognized the benefits of minimizing confusion and developing consistent, coherent patent rules when it created the CAFC and gave the court exclusive jurisdiction over patent law.¹⁵¹ This same policy of coherency would be served by a definition of “limitation” that is consistent for two areas of patent law. This consistency is especially important, given the overlap between prosecution history estoppel and the All Limitations Rule. The two rules both serve as limitations on the doctrine of equivalents, and since they are often analyzed together by the courts, it would sow confusion to have separate definitions of “limitation” for the two rules. Since both rules have given rise to recent confusion and both deal fundamentally with limitations, the two rules must remain in step and change together if they change at all.

150. “[P]rosecution history estops Kustom from relying on the position that a device which searches for both fastest and strongest targets performs substantially the same function as a device which searches for either the fastest or the strongest target. During prosecution, in response to a rejection for obviousness under 35 U.S.C. § 103, Kustom amended claims 1 and 16 to include *this limitation* to the alternative search for magnitude or frequency. . . .” *Kustom Signals*, 264 F.3d at 1333 (emphasis added).

151. See *Festo*, 234 F.3d at 571; see also *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 390 (1996) (citing H.R. REP. NO. 97-312, at 20–23 (1981)).

Another argument favoring a consistent definition for the two rules is that such a definition is equitable; it does not in fact favor either the patentee or the accused infringer. The patentee of course prefers expansion of the doctrine of equivalents, arguing that the All Limitations Rule was never intended to completely preclude any assertion of the doctrine of equivalents. If the rule were taken too literally—for example, if every word in a claim represented an element for purposes of this rule—complex claims would rarely match up enough with accused devices for infringement to be found.¹⁵² The interests of the patentee are aligned with the policy that others should not be allowed to practice fraud on a patent, and this policy still resonates from the Supreme Court’s *Warner-Jenkinson* decision.¹⁵³ But although patentees prefer to have fewer, broader limitations for purposes of the All Limitations Rule, they prefer a more constrained definition for purposes of prosecution history estoppel. Indeed, patentees can use the same policy argument—that of preventing fraud on the patent—for both the broad and the narrow approach, depending on the context. For prosecution history estoppel, the patentee prefers a narrowly defined limitation because such a definition allows more of the claim language to be protected from equivalent infringement as well as literal infringement.

Conversely, for both the All Limitations Rule and prosecution history estoppel, the accused infringer’s interests are directly opposed to those of the patentee. Where the patentee would have “limitation” defined broadly for purposes of the All Limitations Rule, the accused infringer would have it defined narrowly. However, where the patentee would have “limitation” defined narrowly for purposes of prosecution history estoppel, the accused infringer would have it defined more broadly. Of course, the accused infringer’s main policy argument centers on the notice function of claims and prevention of the fraudulent extension of patent rights. Because the proposed definition of “limitation” would not necessarily favor either party over the other, application of the proposed definition would lead to fairness as well as consistency.

152. See *Ethicon Endo-Surgery, Inc. v. United States Surgical Corp.*, 149 F.3d 1309 (Fed. Cir. 1998).

153. *Warner-Jenkinson*, 520 U.S. at 33.

V. CONCLUSION

The two-part approach to defining the core terms of prosecution history estoppel and the All Limitations Rule thus accomplishes the foremost policies of recent patent law, while at the same time harmonizing the three analyses of *Kustom Signals*. It would give precedence to the notice function of claims, accomplishing what the CAFC attempted to do in the *Festo* case.¹⁵⁴ It would lead to the correct conclusion that the word “or” can indeed be a limitation for purposes of the All Limitations Rule because it is a word that functions to define the metes and bounds of a claim, distinguishing the *Kustom Signals* radar from that of *Applied Concepts*. This approach is all the more viable because it is consistent with the current trends in the use of the term “limitation.”

The proposed approach would do more than just eliminate the inconsistencies in the *Kustom Signals* case. It would provide clarity and definitional stability to a central part of patent law, harmonizing prosecution history estoppel and the All Elements Rule. It would eliminate confusion and provide coherency for patent drafters, patentees, and the public. The resulting predictability would in turn enhance economic stability, truly promoting the progress of science and the useful arts.

Philip M. Nelson

154. *Festo*, 234 F.3d at 574–75.